John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

December 26, 2014

ELECTRONIC MAIL

Ms. Shari Kolak
Remedial Project Manager
U.S. EPA Region 5
77 W. Jackson Blvd.
Chicago, IL 60604

RE: **Troy Well Field Unknown Source**
Remediation Reports
Remedial Response
Miami County
555001353

Subject: Ohio EPA Review: Final Remedial Investigation (RI) Report and Risk Assessment, East Troy Contaminated Aquifer Site

Dear Ms. Kolak:

On December 10, 2014, the Ohio Environmental Protection Agency (Ohio EPA) Division of Environmental Response and Revitalization, received the Final Remedial Investigation (RI) Report and Risk Assessment submitted by SulTRAC, on behalf of U.S. EPA, for the East Troy Contaminated Aquifer Site (ETCA) located in Troy, Miami County, Ohio. Ohio EPA is providing the following comments to assist in a more complete document.

If you have any questions or would like to meet to discuss the comments, please contact me at (937) 285-6456 or madelyn.smith@epa.ohio.gov.

Sincerely,

Madelyn Smith
Site Coordinator
Division of Environmental Response and Revitalization

Enclosure

ec: Guy Montfort, Tetra Tech
Erin LeGalley, DERR-CO
Allison Reed, DDAGW-SWDO

General Concerns

1. Ohio EPA has concerns that the vapor intrusion (VI) risks have not been fully delineated and requests that efforts for further VI sampling and, if necessary, mitigation be carried out as additional current exposures are identified.

    a. The RI Report and Human Health Risk Assessment (HHRA) were revised to conclude that indoor air sampling may reasonably estimate VI cancer risks and hazardous index (HI) numbers from the Residential Area Plume (Upgradient) because both indoor air sampling and the vapor intrusion screening level (VISL) Calculator indicate that the VI pathway presents an unacceptable risk and hazard to residents. Revisions to the text also state that the results of indoor air sampling may underestimate VI risk and hazard from the East Water Street Plume (Upgradient).

    Ohio EPA agrees that the VI pathway presents or may present unacceptable risk and hazard to residents and workers in both plume areas. Ohio EPA believes that additional VI sampling is necessary to define the nature and extent of indoor air impacts because VI is building-specific and it is unknown if any preferential pathways exist. Where screening levels are exceeded, mitigation should occur or additional sampling should be performed to determine if unacceptable risk or hazard is present.

    b. The HHRA (p. 1-22) was revised to state that contamination was not detected outside the plume boundaries where RI activities such as ground water monitoring occurred. Ohio EPA recommends revising this statement because it does not consider the VI pathway. The extent of VI impacts does not necessarily coincide with the upgradient ground water plume boundaries. For example, St. Patrick Elementary School required vapor mitigation but is located outside the ground water plume boundaries. This may be because St. Patrick's Elementary School is located near the ground water plume, or because preferential pathways exist, or both.

    U.S. EPA's "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils" (2002) recommends evaluating the VI pathway for all inhabited buildings "near" (≤100 feet from) subsurface contaminants, and that buildings with significant preferential pathways, such as those in a dense urban area, should be evaluated even if they are >100 feet away. The unknown nature and extent of VI impacts beyond the upgradient ground water plume boundaries (i.e. outside the ground water plume and in the downgradient plume areas) should be discussed in the uncertainty assessment and additional VI sampling and, if necessary, mitigation should be performed.

Specific Comments on RI Report Updates

2. P. 4-8, "HHRA Summary and Conclusions," text was added to explain that mitigation systems were installed beneath homes and businesses exceeding VI screening levels during the 2006 Time Critical Removal Action. However, mitigation systems have not been installed beneath homes and business exceeding screening levels during the RI.

   The RI does not discuss further data collection activities to determine if unacceptable risk or hazard is present where screening levels were exceeded. Ohio EPA requests that a recommendation be added to the RI Report to address this data limitation and clarify what measures will be taken to ensure the protection of human health for these situations.

3. P. 9-1, Ohio EPA supports the following recommendations made in the draft RI: "*Conduct routine (quarterly or semi-annual) groundwater monitoring of VOCs using the existing groundwater monitoring network to supplement the groundwater data set. Monitoring could proceed concurrent with the FS or during the remedial design phase*" and "*Conduct routine (quarterly or semi-annual) VI monitoring at properties overlying the groundwater plumes. Monitoring could proceed concurrent with the FS or during the remedial design phase.*" These recommendations reflect uncertainties that result from data limitations in the risk assessment and are consistent with the "USEPA Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," (1988), page 3-30, 31, Table 3-13, section 7.2, which identifies data limitations and recommends future work. These recommendations would ensure that uncertainties surrounding VI continue to be investigated and that ground water monitoring will be conducted in the future, while still allowing the RI Report and process to move forward. However, these recommendations were removed from the final RI. Ohio EPA requests that these recommendations be included in the RI Report.

October 7, 2014 RI Report Comments Not Fully Addressed

4. Previous comment 2 – *Section 4.2.7.1 discusses a second potential source of contamination, a former dry cleaner at 423 East Main Street. However, there is no clear evidence that supports this as a source. The text states, "levels of PCE were highest on Union Street between Canal and Franklin Streets, decreased north of Franklin and then increased again between Franklin and East Main". Please provide more information as to why it is believed this is a second source area. If it is determined to be a second source area, then additional characterization should be considered.*

   No additional information was added to the text. However, draft meeting minutes provided by SulTRAC regarding the October 9, 2014 conference call to discuss RI comments state, "*The possibility (of a second source) was indicated solely by the*

spatial distribution of PCE in groundwater samples collected in the area surrounding the 432 East Main property." For a more complete report, Ohio EPA requests that this statement be added to the text in section 4.2.7.1.

5. Previous comment 11 – *Figure 3.7 should include wells with corresponding water levels used to create the potentiometric map.*

   A revised figure 3.7 was not included. For a more complete report, please include a revised figure 3-7 with the final RI Report.

October 7, 2014 HHRA Comments Not Fully Addressed

6. Previous comment 3a requested "*using the VISL calculator to conservatively evaluate the ground water to IA pathway for further risk management decisions and to guide further sampling efforts*." The VISL calculator results were provided in the updated HHRA.

   a. The RI Report would be clearer if the VISL Calculator results were summarized in tables (similar to the risk and hazard numbers that are calculated using indoor air data). Currently the VISL Calculator results are only discussed in the revised RI and HHRA text.

   b. P. 2-130, twelfth bullet in the "Overall HHRA Conclusions," text was added to discuss the VISL Calculator results. The use of the VISL Calculator above potential source areas presents an uncertainty due to contribution from VOCs in the soil. To aid in completeness of the RI Report, Ohio EPA recommends that a discussion of this potential underestimation of risk be added.